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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,223	03/05/2002	Roger R. Lesieur	C-2351DIV	1597

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EXAMINER
DOROSHENK, ALEXA A

ART UNIT	PAPER NUMBER
1764	3

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/091,223	Applicant(s) LESIEUR ET AL.	
	Examiner Alexa A. Doroshenk	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 1 of the specification, the status of the divisional application 09/490,679 should be updated as it is now abandoned.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 3, 4, 8, 12, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunster et al. (4,865,820).

With respect to claims 3, 8 and 13, Dunster et al. discloses a method for mixing a fuel/steam or vaporized fuel with an oxidant gas or oxidant/steam gas (col. 1, lines 13-24 and col. 3, lines 35-40) suitable for use in an autothermal fuel gas reformer catalyst bed (col. 3, lines 54-57) taking place in an apparatus comprising:

a catalyst bed (32) having an inlet end (fig. 5);

a mixing station (30) adjacent to said inlet end of the catalyst bed (fig. 5), said mixing station including an inlet chamber (68), a manifold (72) interposed between said inlet chamber (68) and said catalyst bed (32) inlet end (fig. 5); and

a plurality of cylindrical transfer tubes (80) extending through said manifold (72) from said inlet chamber (68) to said inlet end of said catalyst bed (fig. 5) each of said tubes having a plurality of gas entry passages (86) in sides walls of the tubes, each gas passage having an axis which is perpendicular (see fig. 5) to an axis of the tubes, each passage spaced apart from the catalyst bed inlet end at a distance which is at least two times the diameter of said tubes (see fig. 2).

The method comprising the steps of:

providing a first gas inlet passage (66) opening into the inlet chamber (68);

providing a second gas inlet passage (70) opening into said manifold (72);

introducing a vaporized fuel/steam mixture (col. 3, lines 35-40) into said inlet chamber (68) or manifold (72);

introducing an oxidant gas into the other of said inlet chamber (68) or said manifold (72);

causing one of said fuel/steam mixture or said oxidant stream to flow axially through said transfer tubes toward the inlet of said catalyst bed and causing the other of said fuel/steam mixture or said oxidant stream to flow from said manifold (72) radially into said transfer tubes (80) through said gas entry passages (86) (col. 6, lines 9-13);

maintaining a pressure differential between the interior of the transfer tubes and the manifold which will result in the radially flowing stream entering said tubes to be entrained and deflected into the axially flowing stream (col. 5, lines 10-16).

Dunster et al. does not disclose wherein the pressure differential is such that radially flowing stream penetrates the interior of the transfer tubes at a distance which is about one-half of the radius of the interior of the transfer tubes, but Dunster et al. does disclose wherein the pressure differential is a result-effective variable which effects the uniformity of the gas flow (col. 5, lines 10-21). Since the pressure differential is a known result-effective variable, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify this variable to get optimum operation.

A result effective variable is a variable recognized in the art as a variable which, when modified, achieves a recognized result (MPEP 2144.05). A person having ordinary skill in the art would have found it obvious to determine the optimum value of any recognized result effective variable, as it has been held that if the difference between the claimed invention and the prior art involves the discovery of an optimum value of a result effective variable, such a discovery is ordinarily within the skill level of the art. *In re Boesch and Slaney*, 617 F2d. 272, 276 [205 USPQ 215] (CCPA 1980).

With respect to claim 4, Dunster et al. does not disclose a percentage of pressure differential, Dunster et al. does disclose wherein the pressure differential is a result-effective variable which effects the uniformity of the gas flow (col. 5, lines 10-21). Since the pressure differential is a known result-effective variable, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify this variable to get optimum operation.

A result effective variable is a variable recognized in the art as a variable which, when modified, achieves a recognized result (MPEP 2144.05). A person having ordinary skill in the art would have found it obvious to determine the optimum value of any recognized result effective variable, as it has been held that if the difference between the claimed invention and the prior art involves the discovery of an optimum value of a result effective variable, such a discovery is ordinarily within the skill level of the art. *In re Boesch and Slaney*, 617 F2d. 272, 276 [205 USPQ 215] (CCPA 1980).

With respect to claims 12 and 17, Dunster et al. discloses wherein said fuel or fuel/steam mixture passes axially through said transfer tubes and said oxidant or oxidant/steam mixture enters said transfer tubes (80) from said manifold (72) (col. 7, lines 6-17).

5. Claims 5-7, 9-11 and 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Dunster et al. (4,865,820) as applied to claims 3, 8 and 13 above, and further in view of Grasso et al. (6,274,259 B1).

With respect to claims 5-7, 9-11 and 14-16, Dunster et al. discloses the general reforming of hydrocarbons but does not disclose specific hydrocarbons, such as gasoline, diesel fuel and methanol as claimed.

Grasso et al. discloses wherein gasoline, diesel fuel and methanol are known reformable hydrocarbons (col. 6, lines 29-31 and lines 53-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select any hydrocarbon recognized for reforming processes in the method of Dunster et al. as it is merely the selection of a specific hydrocarbon known to be effective in a reforming process.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 703-305-0074. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Alexa Doroshenk
Patent Examiner
Art Unit 1764

June 16, 2003